

# **REPRESENTATIONAL MECHANISMS**

GOING BEYOND THE TRADITIONAL NORMS OF ARCHITECTURAL  
REPRESENTATION AND DESIGN

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**Territory of Investigation - Architecture + Representation**

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# ABSTRACT

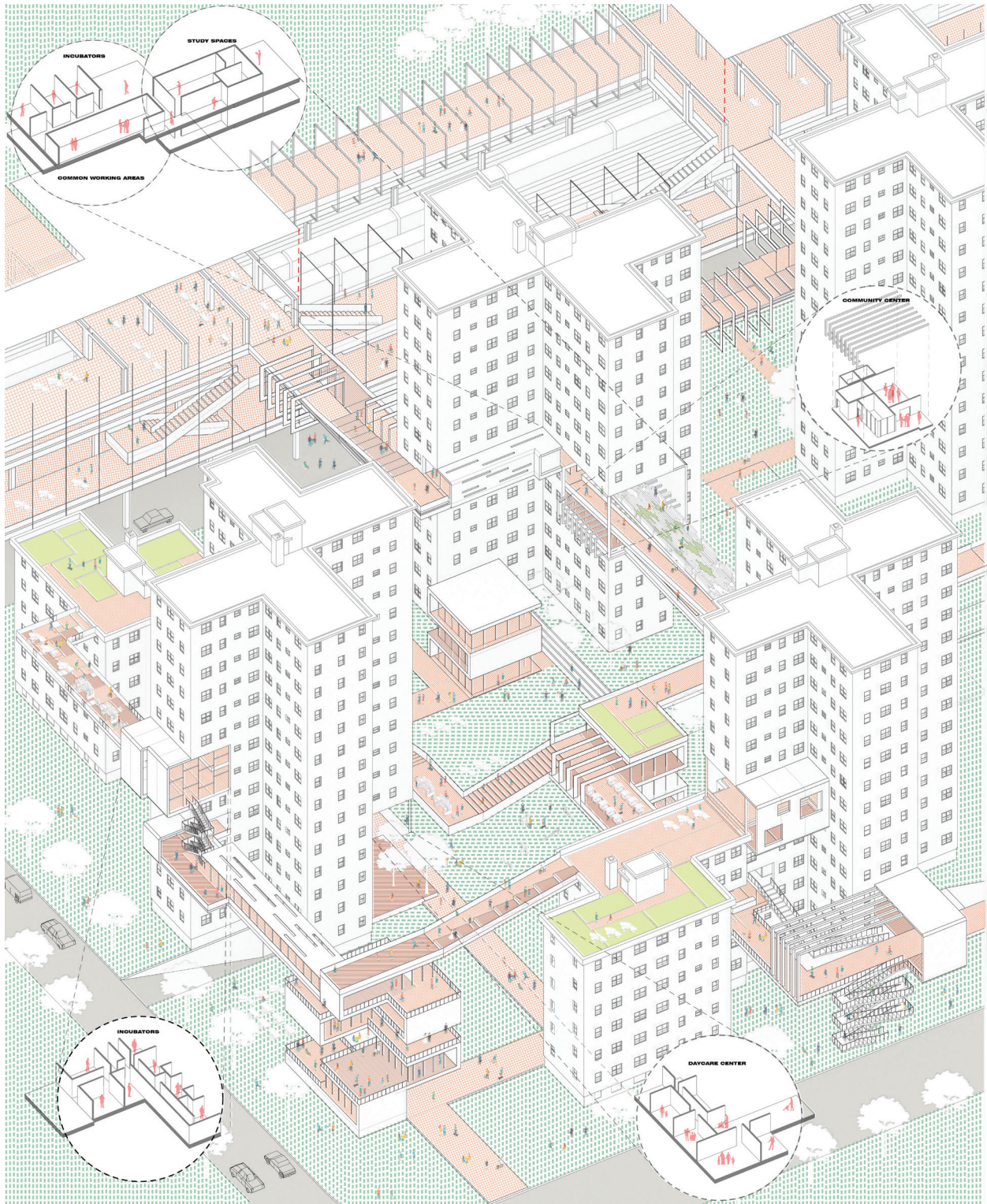
Representation gives a voice to one's ideas, it gives a voice to that we ourselves cannot fully comprehend in our minds. It has taken many forms over the years, through drawings, paintings, music, and even through architecture. While for a long time, architectural representation was limited to plans, sections and elevations, new and more diverse modes of representations came into the picture, some analog while some due to technological advancements. Data can now go beyond graphs and pie charts. Documentation of spaces can now go beyond photographs. New atmospheres can be expressed through representation.

By undertaking the Architecture + Representation territory of investigation, I aimed to explore a wide plethora of representation techniques, which ranged from Grasshopper analytical mapping, to hand drawings that generated abstract spatial qualities. I wanted to explore new arenas of design, that began with a new form of representation, something that was provocative enough to inspire but not super concise enough to be completely comprehended at the first glance. It must engage the beholders in a conversation, that is the genesis of innovation. From there begins an iterative process which further refines the initial idea, that takes a small sketch and transforms it into a concept to develop a space. Going beyond the design process, the representation methodologies aided to express concepts in the final phase of the design studio that encapsulated my initial notions. When done right, it can make the entire project come to life. It can show the performance of spaces, it can show a potential progression of the design process and more importantly it can provoke the beholders. Sometimes the representation of a narrative gives new life to the words written. The final result almost becomes an illustration of a world described in language. It can alter ones perception of what is considered to be a plan or section and through that, alter the means of design.



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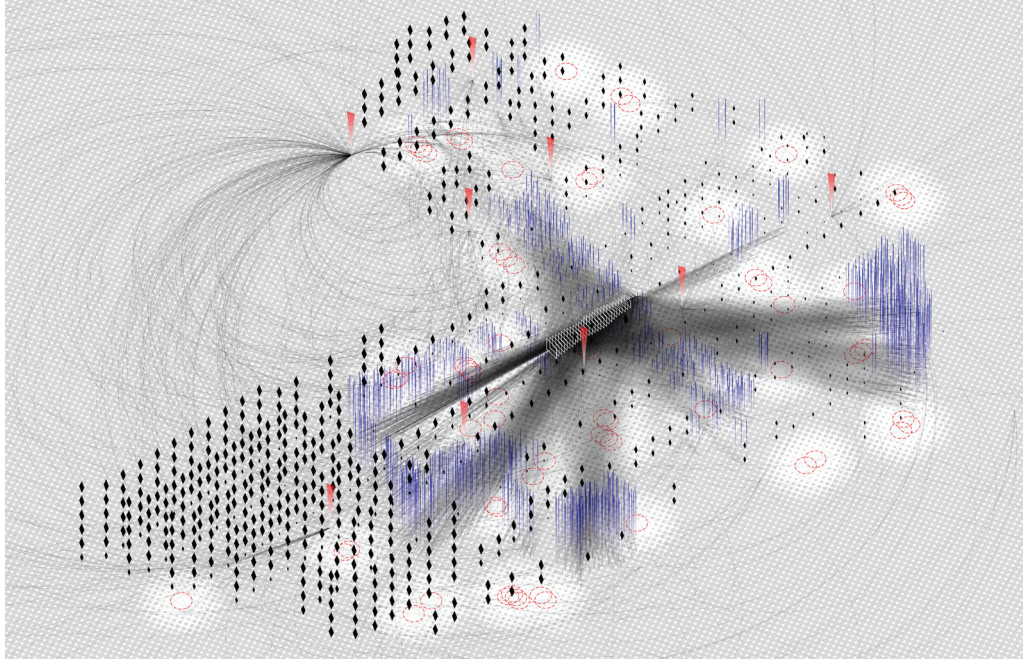


**Image 1** - Final Design generated from the urban analysis process represented as an axonometric showing stronger connections between the existing public housing, and to both the ground and the new subway station.



## PARAMETRIC REPRESENTATION

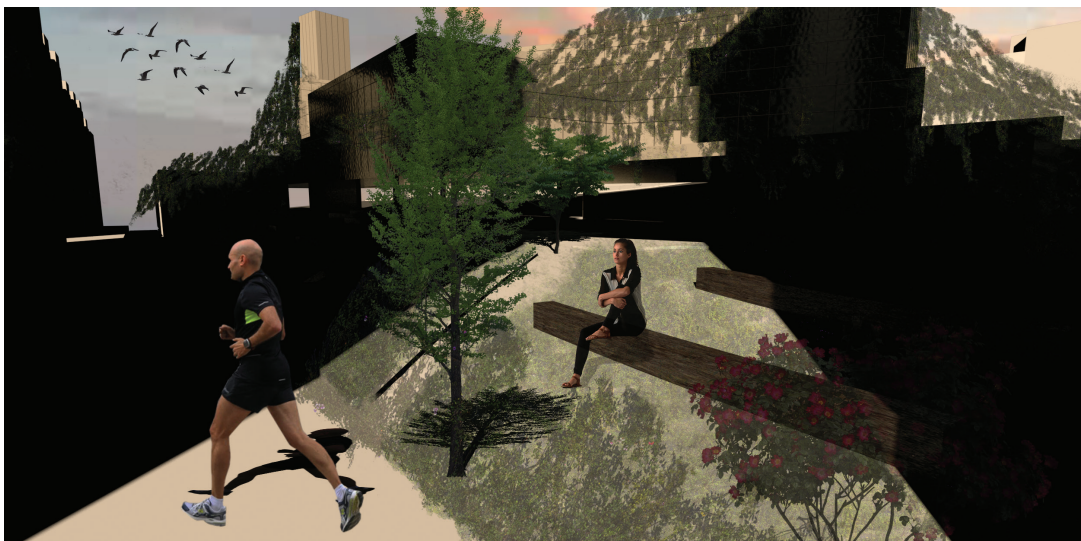
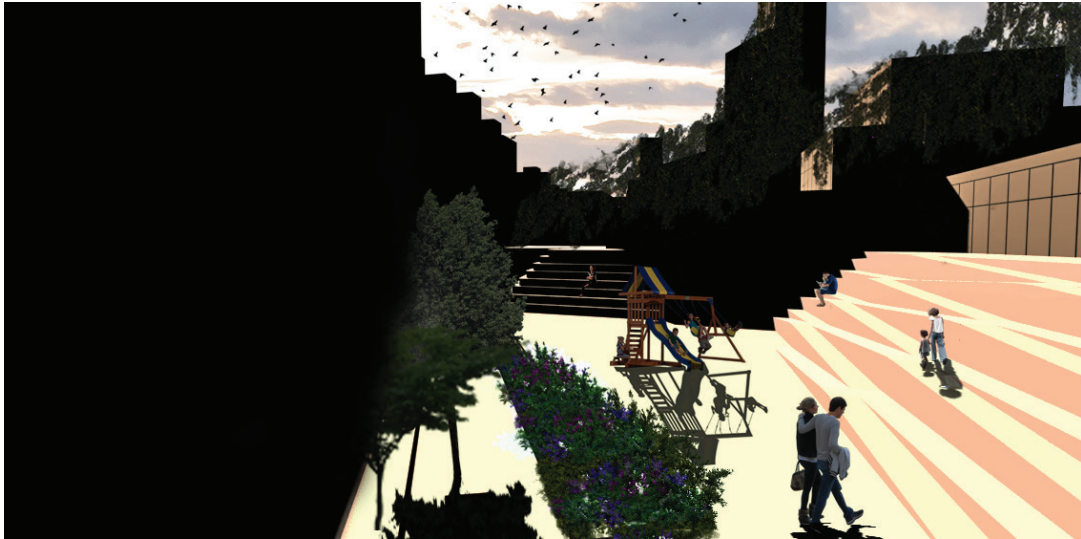
The Architecture+Urbanism portion<sup>1</sup> of the Summer semester including an indepth research into a part of Spanish Harlem, namely 125th street and the adjacent *La Marqueta* in NYC, in order to uncover certain problems that the residents of the area face and how they can be countered through larger urban solutions. In order to do this, an urban map was generated which translated certain data into geometry. One of the discoveries through this process was how the public housing (marked in blue lines), was so detached from the *La Marqueta*, which could possibly be one of the reasons for its dwindling nature. Using Grasshopper scripting, distances were represented into lines which showed how far residents are from the market and this further developed a design brief for the group to work towards.



**Image 2-** Urban Analysis portrayed a level of detachment experienced by the public housing from the ground and *La Marqueta*

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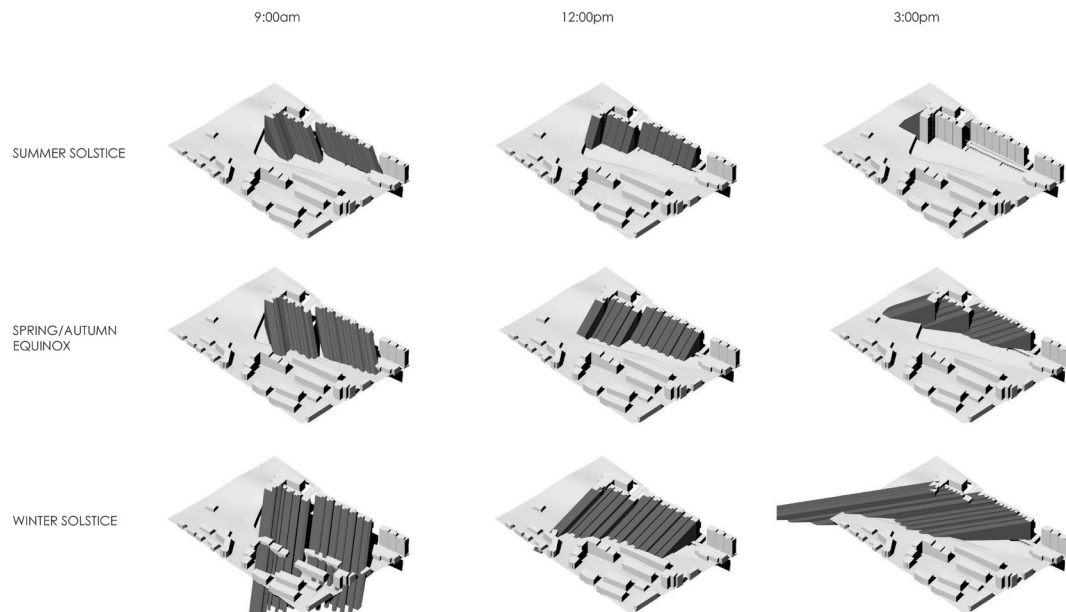
<sup>1</sup>Course Code - ARCH 7111, Design Studio A - Architecture + Urbanism



**Image 3-** A series of illustrations generated that show specific zones of design over the landscape and the potential regions of architectural development at the new project

## REPRESENTATION OF DARK AND LIGHT

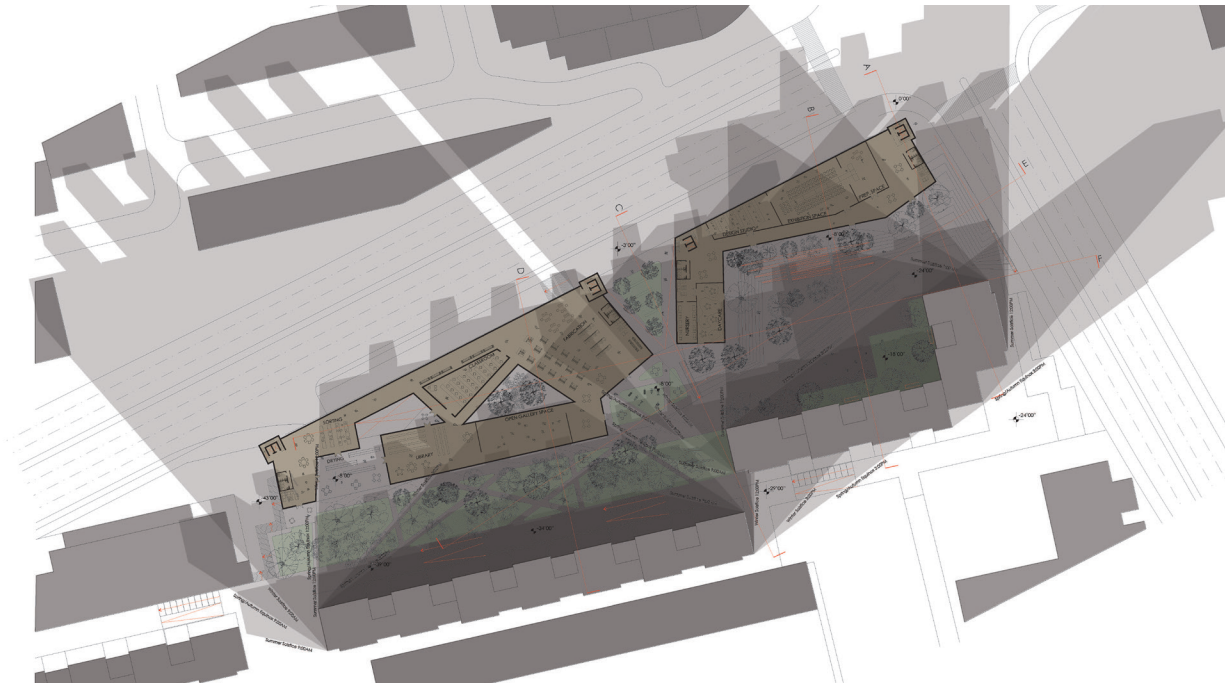
The Option Studio for Spring 2019<sup>2</sup> brought up another representational challenge in the form of shadows invading the site and the proposed architecture. The site, located adjacent to a major intersection in Split, Croatia, is a 24ft deep pit behind tall residential towers which cast perpetual shadows onto the site throughout the year. The urban solution was developed to be a zoning typology that would bring the building out into the light for most of the year as the massing was shaped keeping in mind a maximum influx of sunlight through all seasons of the year. The shadows cast by the existing buildings then became an integral part of all the representational elements of the project, not limited to plans, sections and renders. The aim was to propose design strategies to engage the shadow region of the site. Additionally, by incorporating the shadows into the drawings, it gave way for notions of programmatic capacities, and generated design strategies.



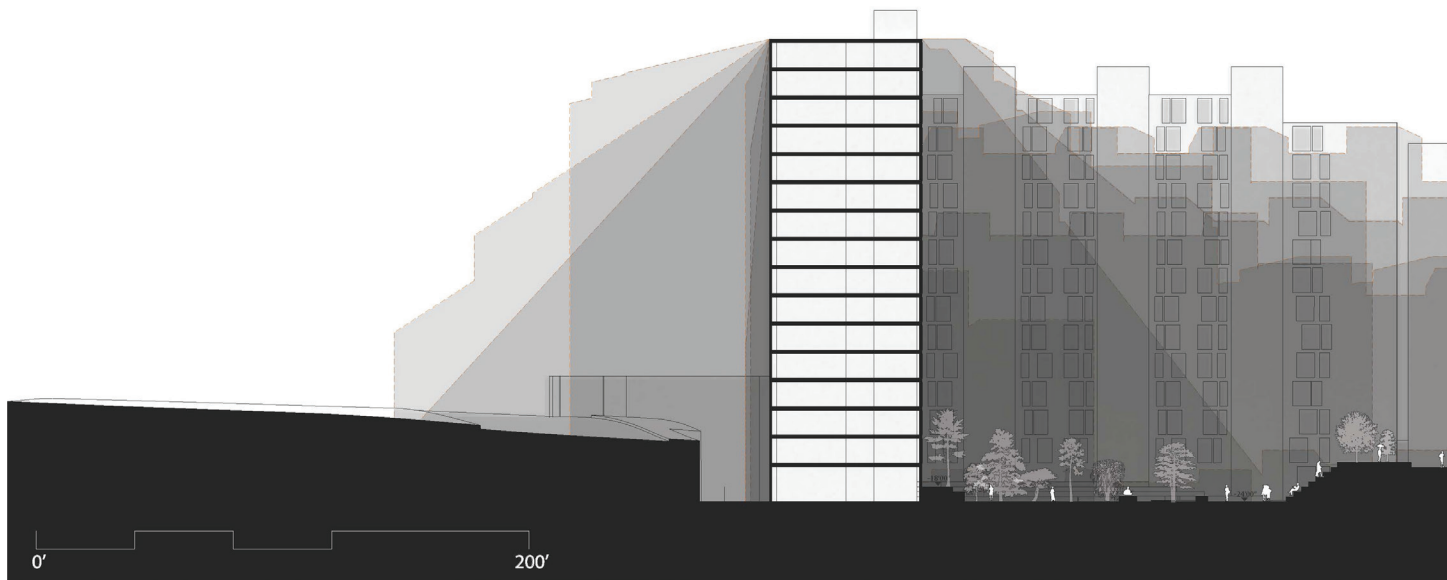
**Image 4-** A series of 3D illustrations of shadows that fall onto the site at specific times of the year giving a glimpse of design opportunities in the lit spaces.

<sup>2</sup>. Course Code - ARCH 7113, Design Studio C - Split 3.0 - Urban Editing



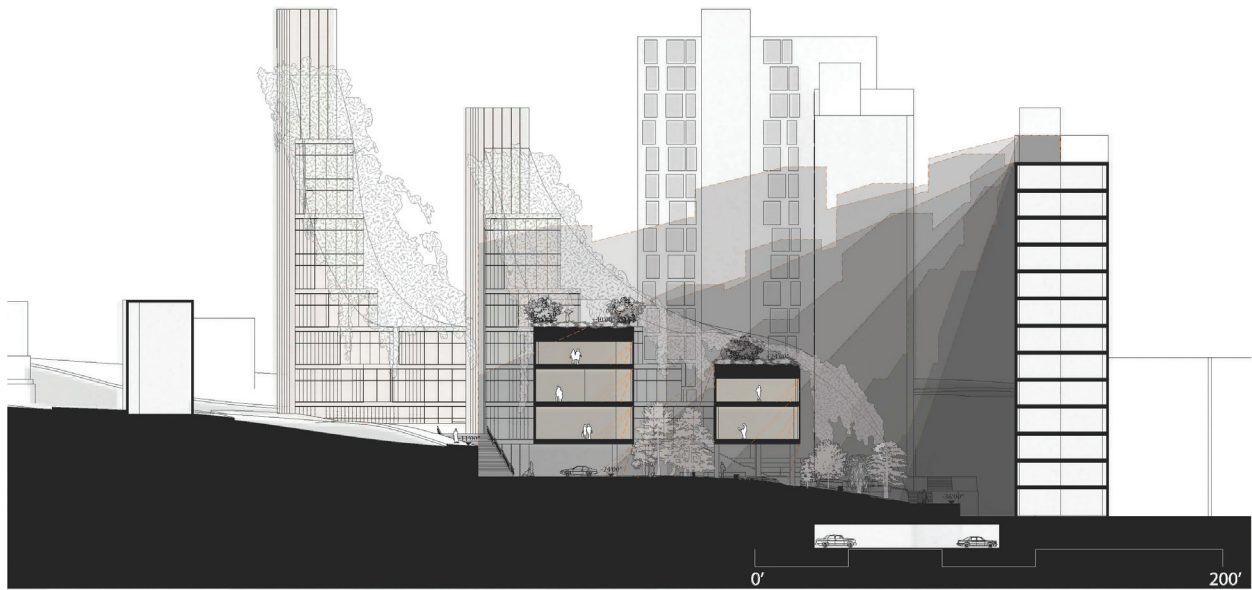


**Image 5-** Final Programmatic plan, showing regions where there will be a larger influx of light throughout most of the year, which in order helps to determine the programmatic potential of the spaces.

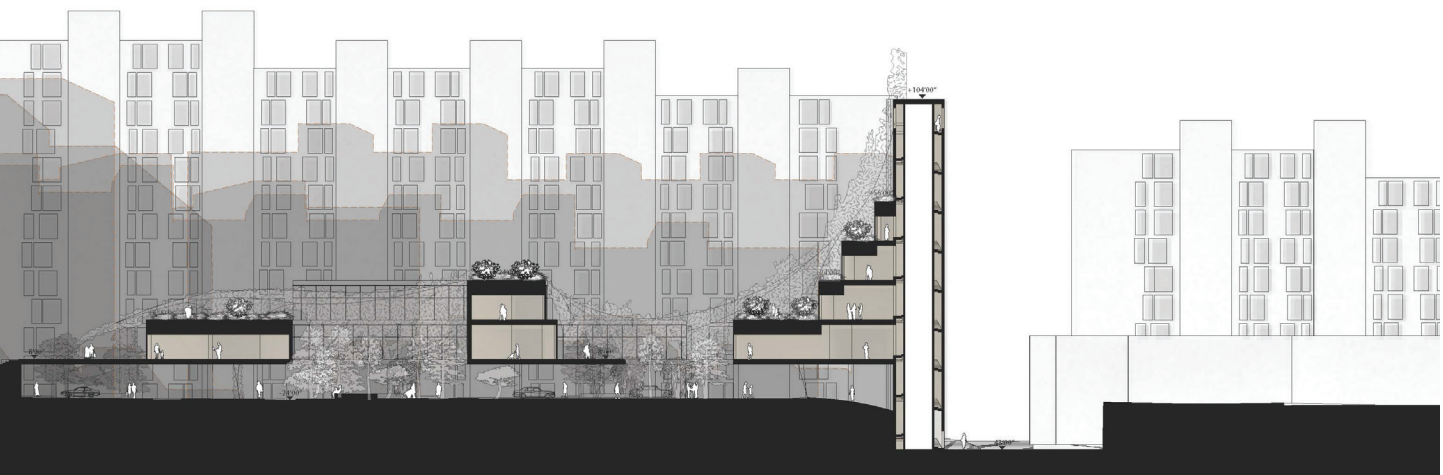


**Image 7-** Larger longitudinal section showing possible interventions within the shadow zones.





**Image 6-** Cross Sectional illustration showing potential design opportunities in the interstitial spaces



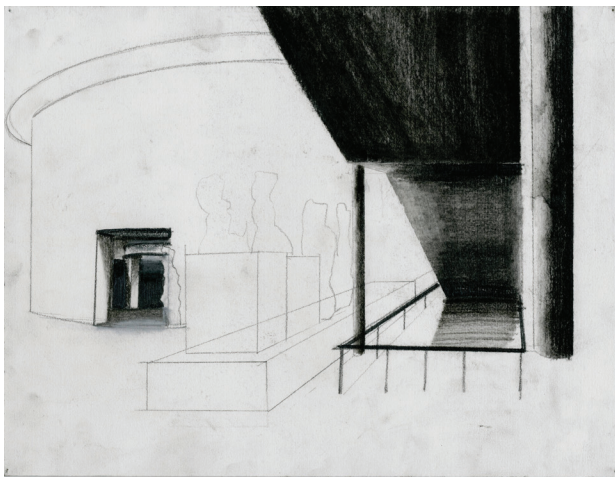
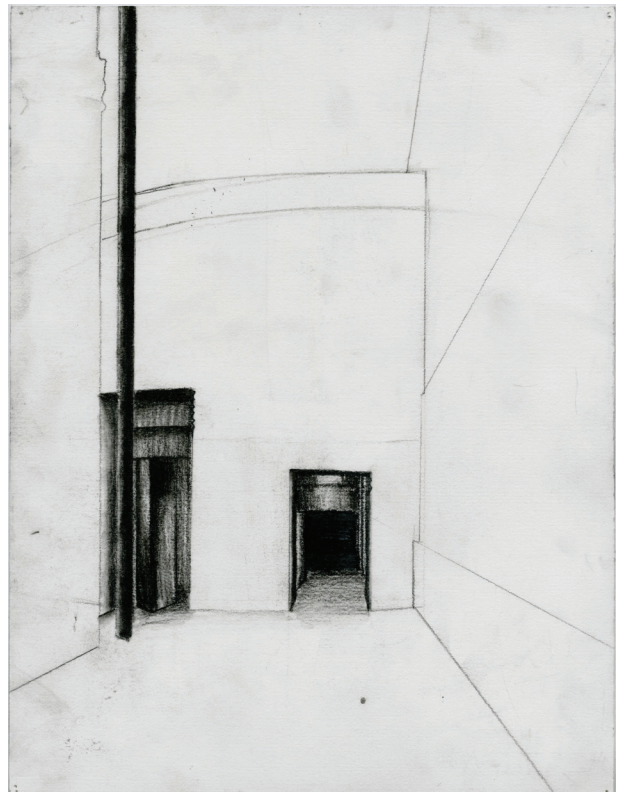
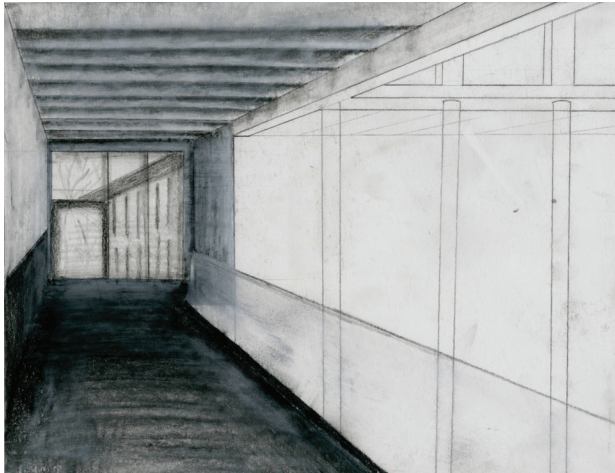
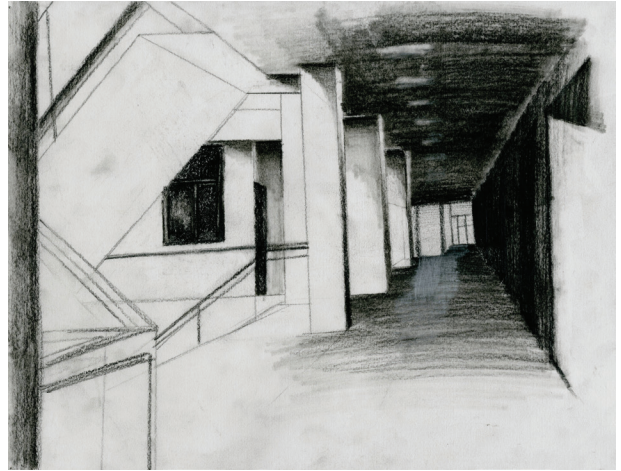
The elective titled “Multivalent Drawings”<sup>3</sup> during the same semester dealt with the challenge of documenting an existing space on campus through a series of drawings that showed elements of the chosen space beyond what one usually sees when he/she experiences the space. Taking the atrium of the Goldwin Smith Hall as the subject, the disparities of scales between the large open space and the smaller adjoining nooks was translated into a series of monochromatic drawings expressing different intensities of dark and light. This technique was introduced to show the scale difference in the spaces and were not meant to be accurate representations of how the spaces are actually lit up.



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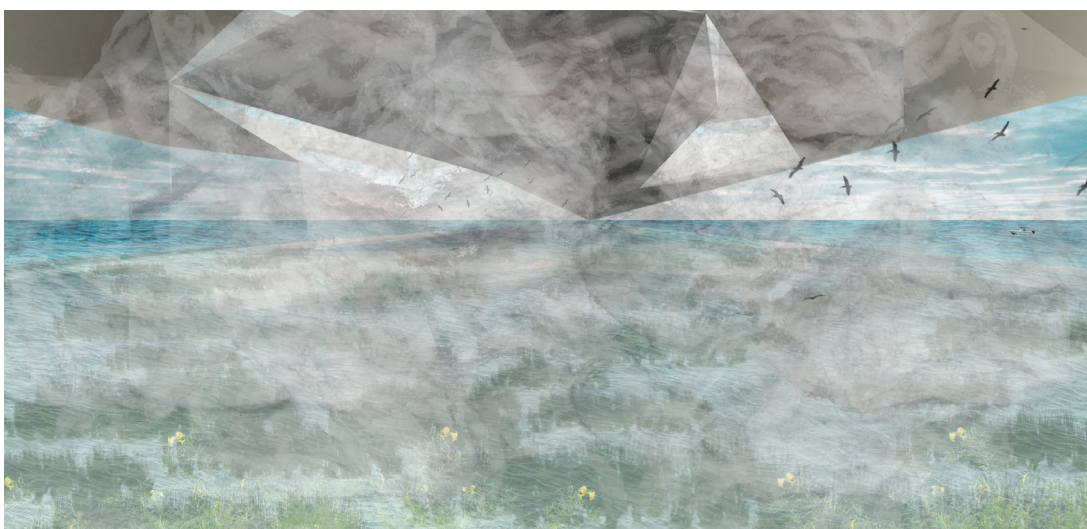
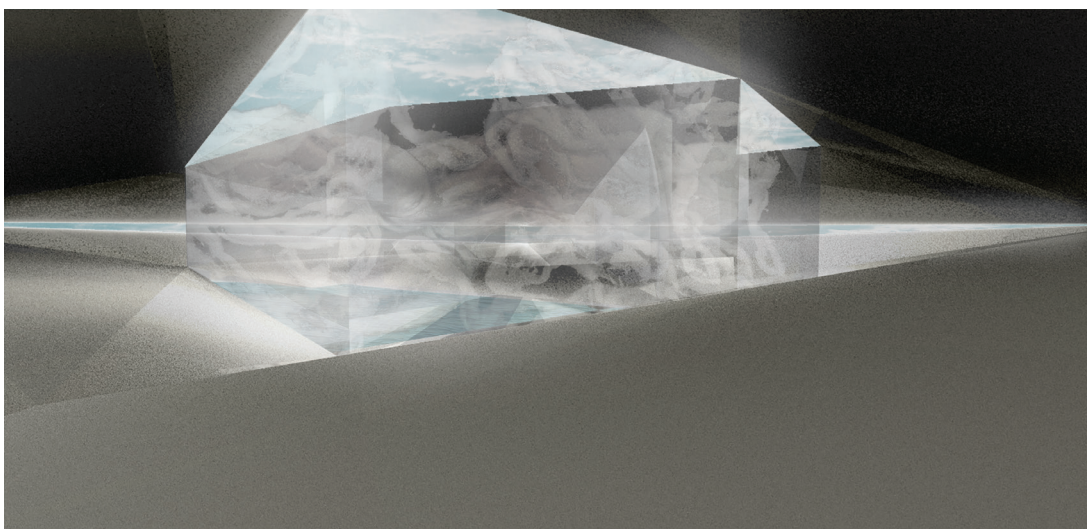
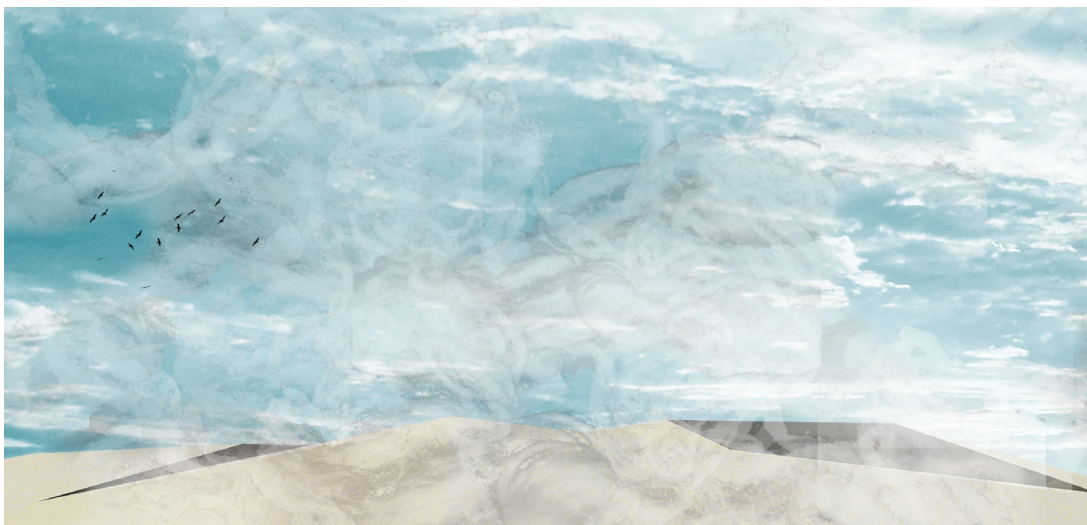
<sup>3</sup>. Course Code - ARCH 6509, Special Topics in Visual Representation - Multivalent Drawings





**Image 8 (left) & Image 9-** Single point perspectives of certain nooks within the larger Goldwin Smith Hall atrium showing scale of spaces through darkness and lightness.





**Image 10-** Conceptual Illustrations showing a misty ethereal atmosphere that is uplifted from the ground, with a perpetual mist that traverses from the base all the way to the roof

## ATMOSPHERIC REPRESENTATION

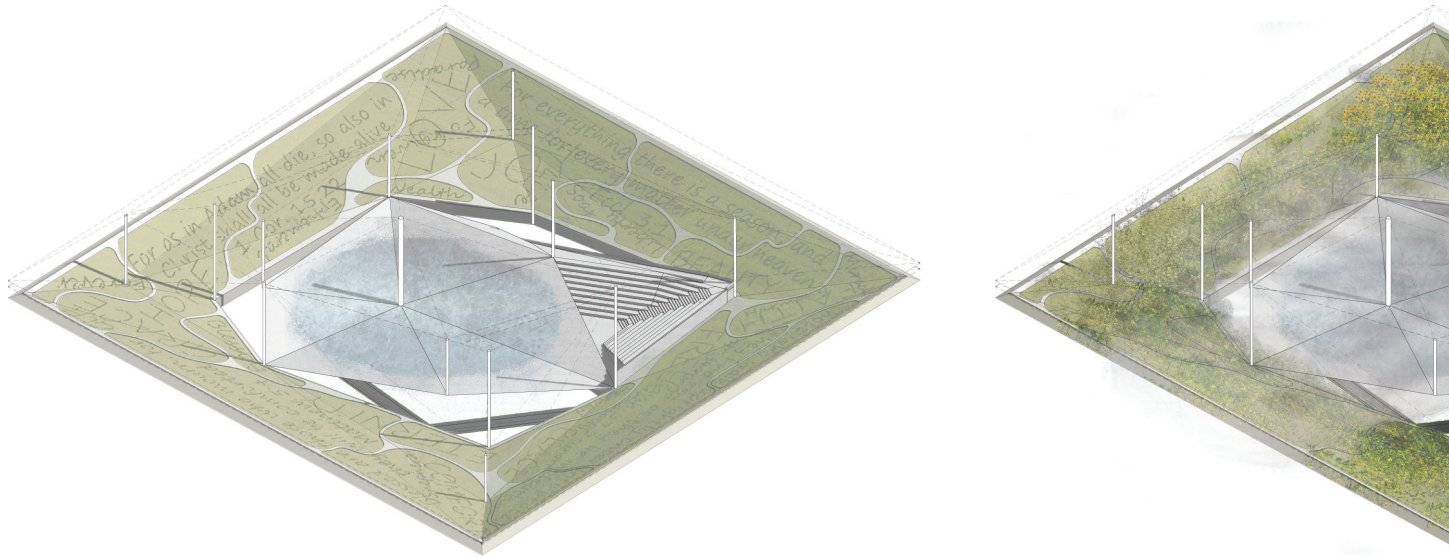
The Option Studio of Fall 2018 <sup>4</sup> was titled “Library of Illusions”, and rightfully so because the studio project was developed with a whimsical process beginning with the design of “Pygmalion’s Spectacles”, a term given to a visual device that would alter one’s perception of space around him/her. My interpretation of this exercise was to design a geodesic dome “helmet” that one would place over their heads which would encapsulate their own atmosphere within, achieved through air plants and a humidifier. Translating this into a potential “library”, the concept developed into an atmospheric autonomous object uplifted from the ground housing its own atmosphere within. In keeping with the theme of the project, all the graphics developed, including renders, sections and such was represented with this atmospheric lightness that almost made the space ethereal. Also, the narrative of the building was to be part crematorium, and part columbarium where instead of books, the deceased’s ashes would be housed in organic containers in the ground, that would form the landscape of the space overtime.



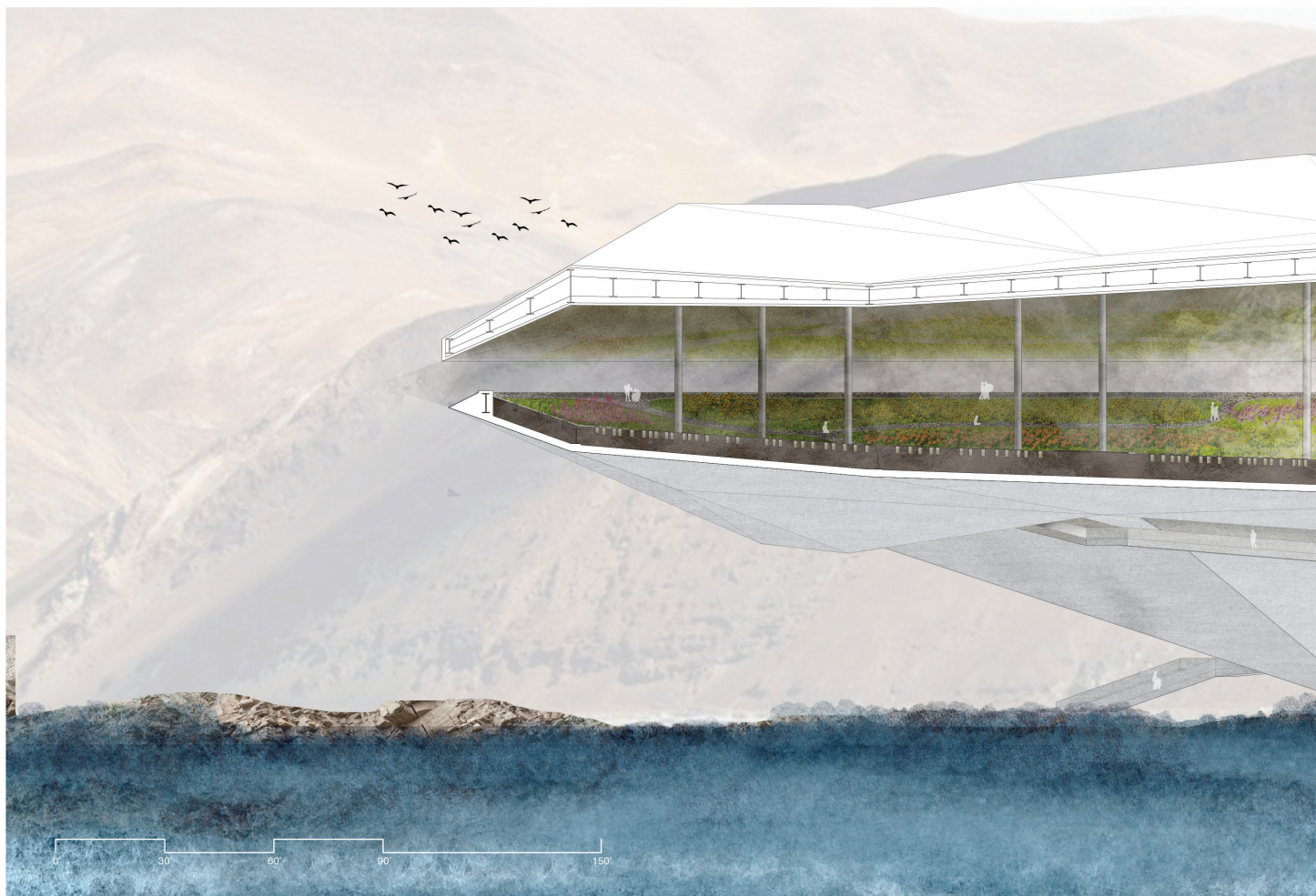
**Image 11-** Conceptual Illustration of a library where nature takes over and creates a temporal space with its own atmosphere

<sup>4</sup>. Course Code - ARCH 7112, Design Studio B - Library of Illusions



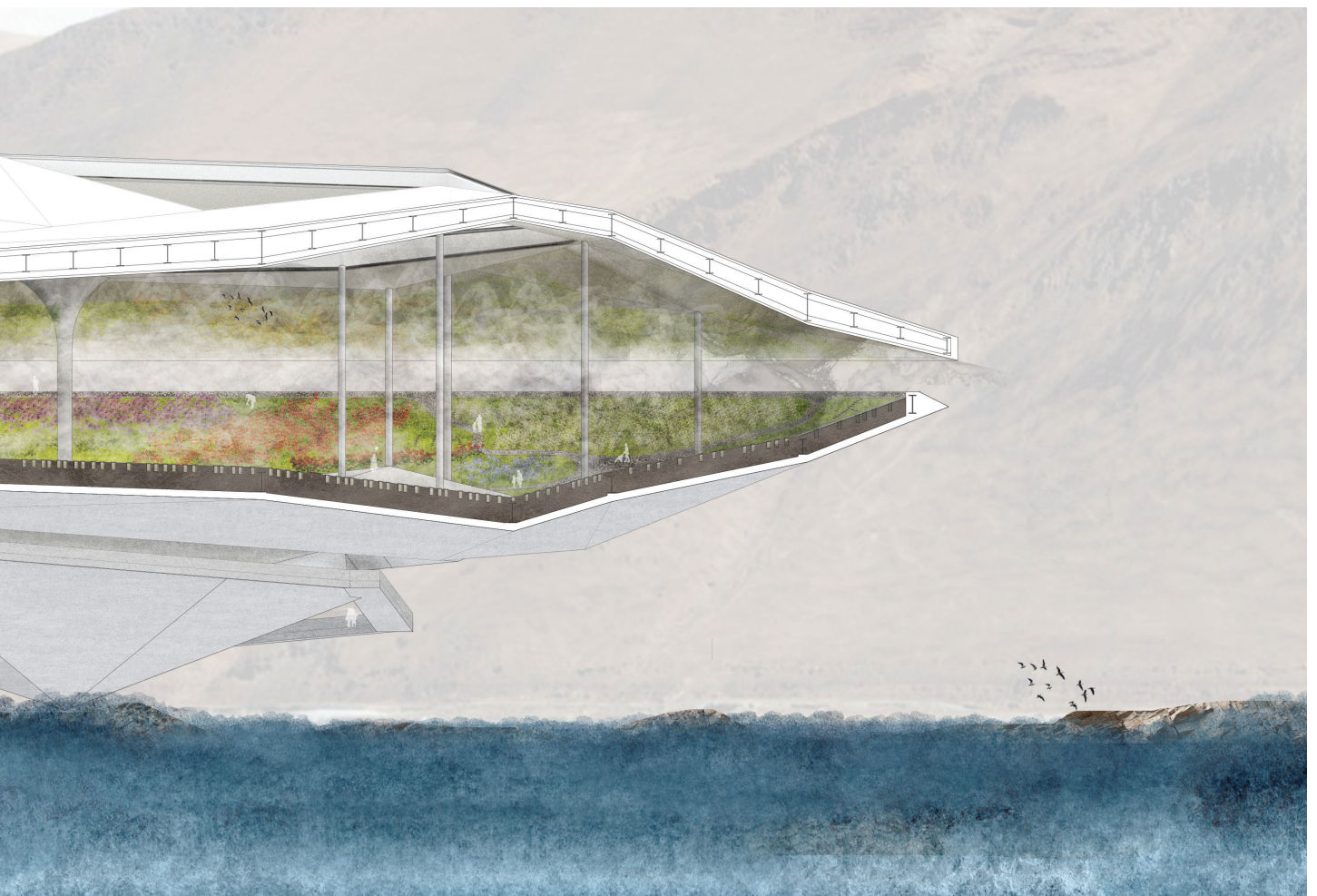
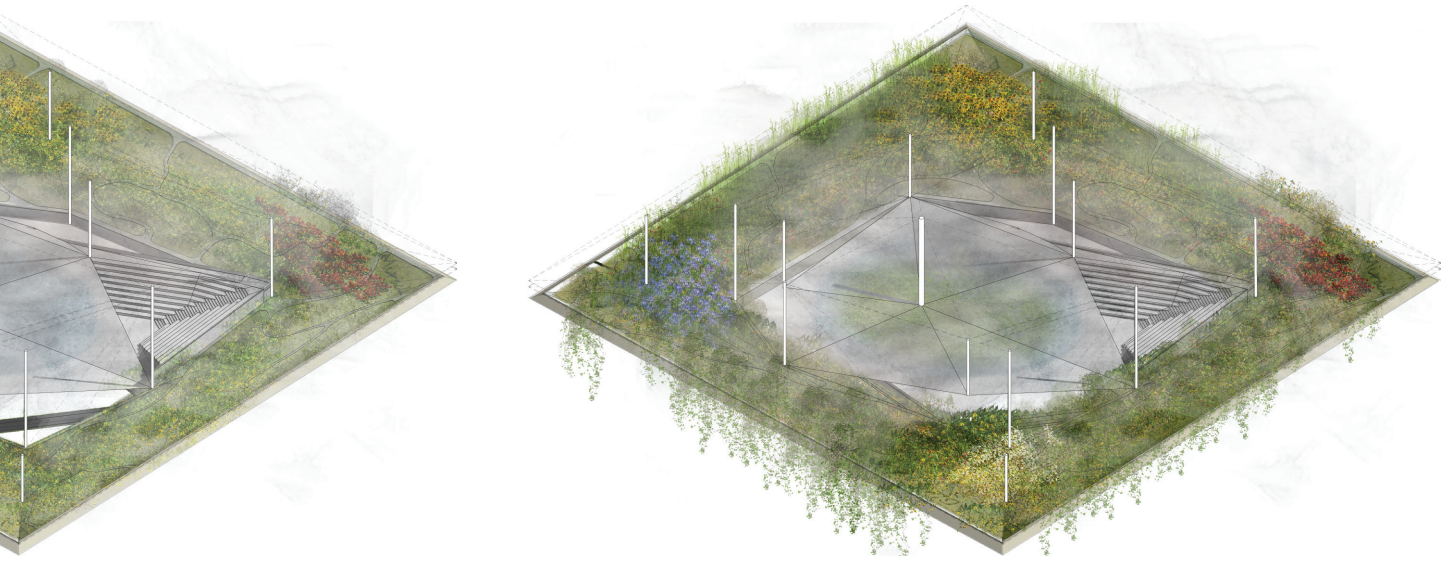


**Image 12-** Series of diagrams showing the phenomenological transitions that happen in the space overtime, as more and more nature begins to take over.



**Image 13-** Section showing the atmosphere imagined within the building and thre way it would alter the ecosystem inside.





In Spring 2019, one of the electives I had taken was titled “Second Nature”<sup>5</sup>, with painting being the chosen media of representation here. The artwork was chosen by us and the exercise included a rigorous repainting of the same artwork in five scales, ranging from A5 sheets to A1 sheets, eventually leading up to 15 paintings at the end. The exercise was meant as a device to translate the underlying themes of the sublime and the picturesque as seen in the landscape portrayed. Through a technique similar to color-blocking, the aim was to maintain the subliminal and picturesque quality of the landscape while abstracting the forms into bare minimum shapes and colors. I always believed that the original painting portrayed a subliminal foreground due to its ambiguous silhouetted nature whilst frame a more defined picturesque landscape in the background and that is the theme I used to carry out this exercise. As Edmund Burke says about the sublime, “...the mind is so entirely filled with its object, that it cannot entertain any other, nor by consequence reason on that object which employs it” (*On the sublime and beautiful*). In the context of the painting, this can be interpreted through the large looming silhouette in the foreground, such that the beholder is unable to ignore its presence.



**Image 14-** Original artwork , and Largest translation of the existing painting (A1)

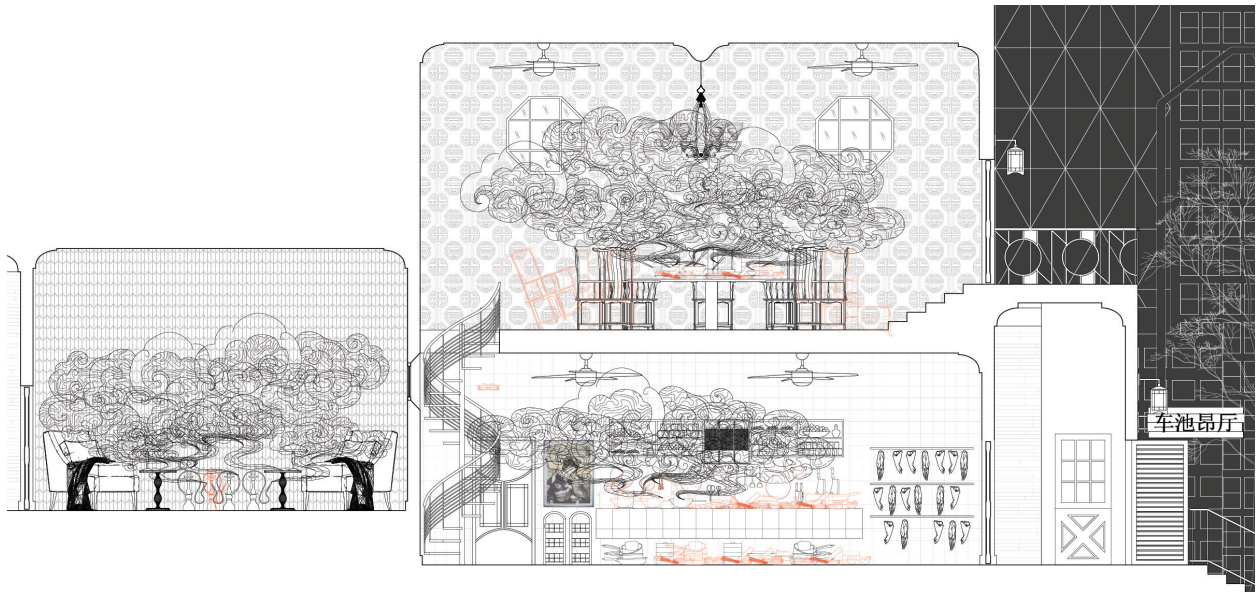
**Image 15 (right)-** Other translations of the same painting in sizes ranging from A2 (top), to A5 (bottom)

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<sup>5</sup>. Course Code - ARCH 6509, Special Topics in Visual Representation - Second Nature







**Image 16** - Visual representation of a rephrased excerpt from Jun'ichirō Tanizaki's *The Gourmet Club*



**Image 17** - Physical representation of the decay of kitchen space, due to large amounts of smoke in the kitchen whilst cooking

## REPRESENTATION AND NARRATIVE

The elective course titled “Drawing the Invisible”<sup>6</sup> during Fall 2018, included not just a representation phase but also rewriting an existing narrative by famous authors namely, J G Ballard, Jun’ichiro Tanizaki, and others. The exercise began with reconstruction an excerpt from the story to generate an architectural language that can be then visualized. By taking certain elements, of atmosphere, space, furniture, senses and other elements that formulate architecture, the story was represented into an illustration. The resultant illustration would be a direct translation of the new text, thus reinterpreting the author’s work into potential architecture.

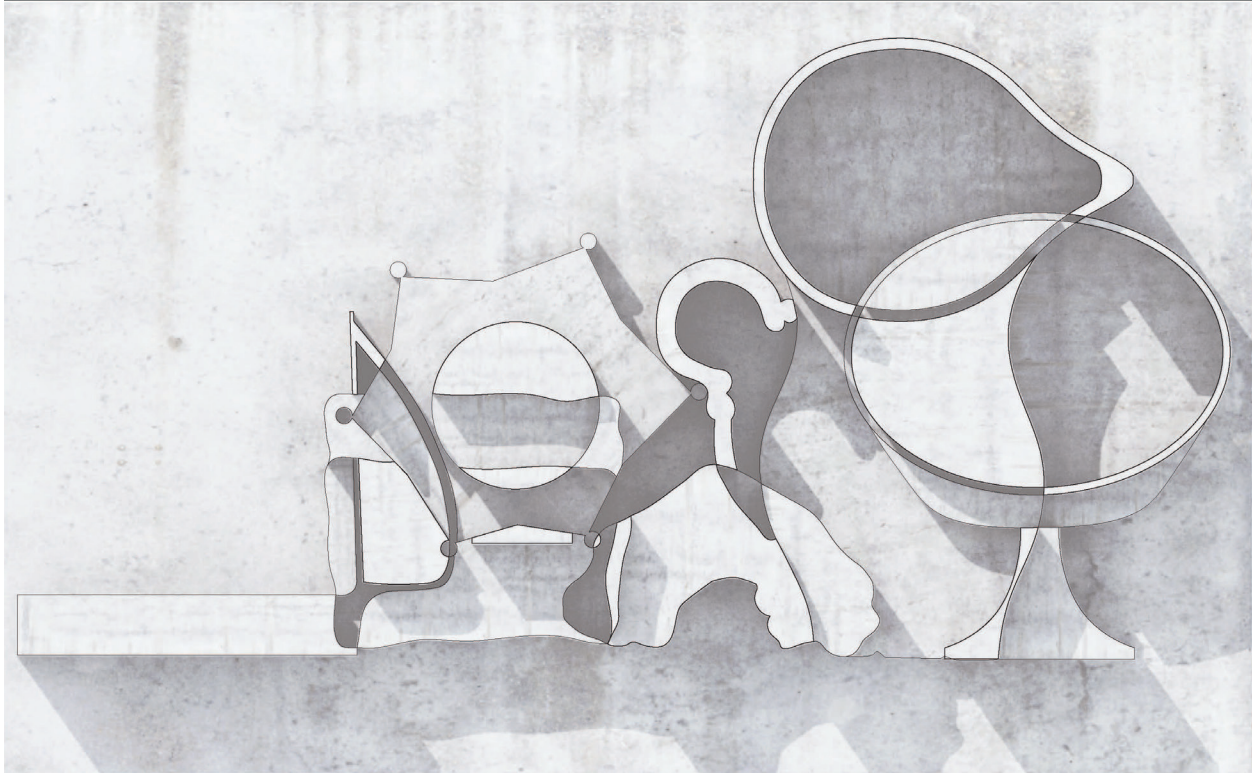
### The Chinese Banquet

<p><u>upper floor of Count G.'s mansion,</u></p> <ul style="list-style-type: none"><li>- club's usual meeting place</li><li>- tobacco smoke, perfume, steam, carbon dioxide,</li><li><u>a table piled high with delicious things, all mixed together,</u></li><li><u>pork fat,</u></li><li><u>beef hotpot,</u></li><li><u>scorched mochi,</u></li><li><u>roasting duck,</u></li><li><u>garlic and onions,</u></li><li><u>leeks.</u></li></ul> <p>The kitchen, it seemed, was near the entrance</p> <ul style="list-style-type: none"><li>- <u>wooden steamers used in making dim-sum snacks.</u></li><li>- <u>beyond the shelf was a lithograph of a beautiful Chinese woman.</u></li><li>- <u>A shelf to the right held green plums, ajubes, longans, and mandarin oranges,</u></li><li>- <u>various canned goods.</u></li><li>- <u>chunks of pork loin and pigs' legs with the skin still on.</u></li><li>- <u>puffs of white steam rise</u></li><li>- gray haze</li><li>- <u>the empty soup bowls, fish bones, china spoons and cups.</u></li></ul>	<p><u>The room</u></p> <ul style="list-style-type: none"><li>- sealed on all four sides by <u>plain, rough wood paneling.</u></li><li>- <u>two tired-looking couches,</u> tea tables</li><li>- ashtrays and matches at the head of each couch</li><li>- no decorations</li><li>- <u>a small window had been set into the wall,</u></li><li>- <u>the air thick.</u></li></ul> <p><u>This floor</u></p> <ul style="list-style-type: none"><li>- <u>a narrow corridor</u></li><li>- <u>white wall along one side and a partition of blue-painted wood</u></li></ul> <p><u>the door</u></p> <ul style="list-style-type: none"><li>- <u>not of glass but a painted louver shutter,</u></li><li>- <u>a sign hung by the door with the words "Chechiang Hall"</u></li></ul> <p><u>The sign</u></p> <ul style="list-style-type: none"><li>- <u>plain, weather-worn wood,</u></li></ul>
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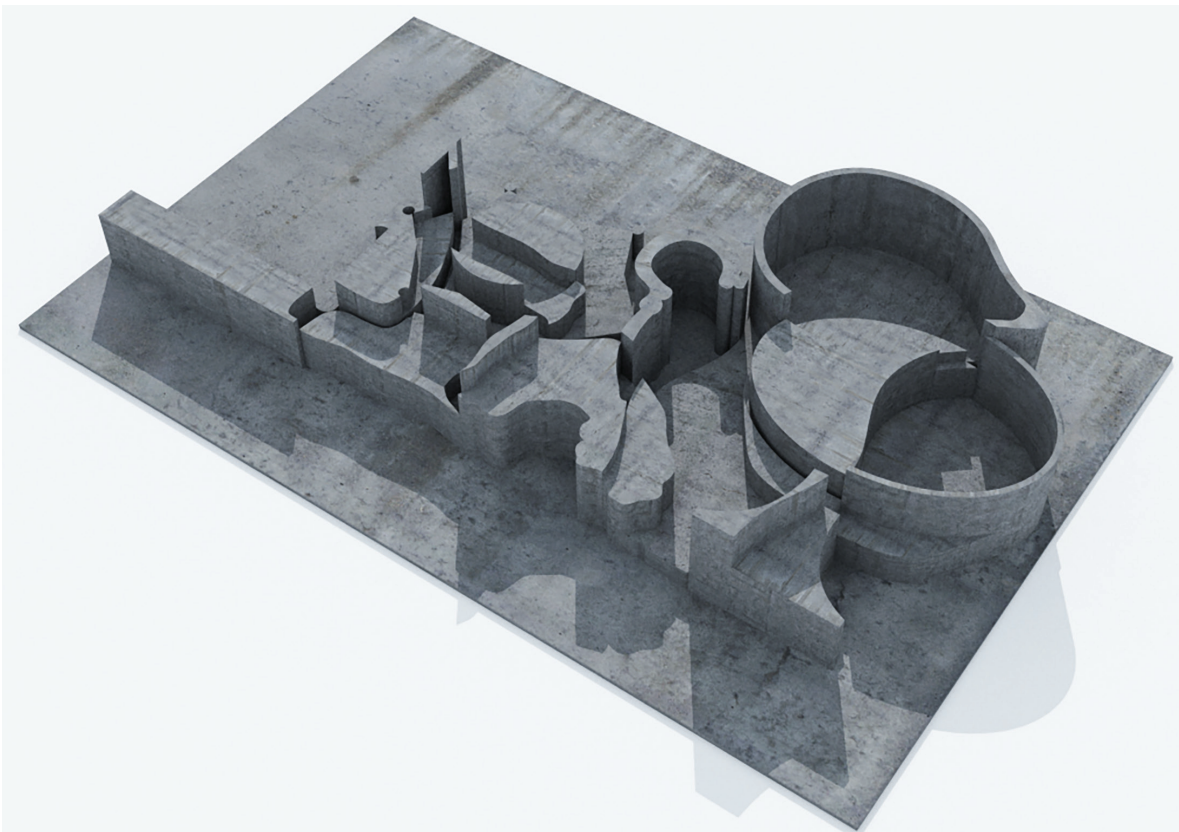
**Image 18** - Excerpt from The Gourmet Club, rephrased into a “menu” inspired format, keeping with the theme of the restaurant portrayed in the story.

<sup>6</sup>. Course Code - ARCH 6509, Special Topics in Visual Representation - Drawing the Invisible





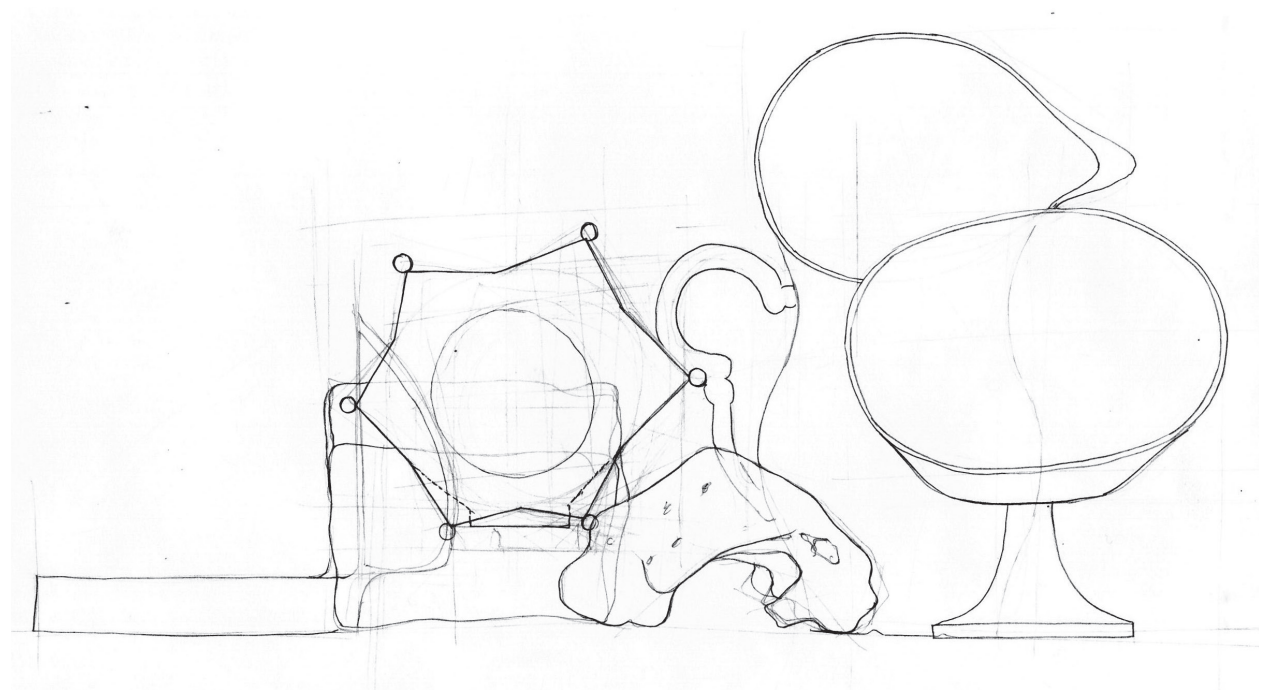
**Image 19** - "Roof Plan" of proposed architectural space, evolved from a Purist Composition drawing of found objects.



**Image 19** - 3D illustration of the architectural space, formed through a series of extrusions of shapes evolved from the Purist Composition drawing.

## REPRESENTATION OF FOUND OBJECTS

One of the analog drawing classes I had taken was titled “Constructed Drawing”<sup>7</sup> which required us to work with found objects as the subjects and generate spatial relationships between them. The objects were composed in various orientations and drawn in distinct formats, one of them being in the format of the Purist Composition by Le Corbusier. This included a juxtaposition of the plans of the objects onto the elevations and a total flattening of the objects. The process then evolved into generating new spatial relations through lineweights, tones and eventually developing a new three-dimensional spatial object which may or may not retain some of the recognizable qualities of the initial found objects themselves. With added materiality, there was a sense of realism achieved where these new objects could be imagined as potential architectural structures.



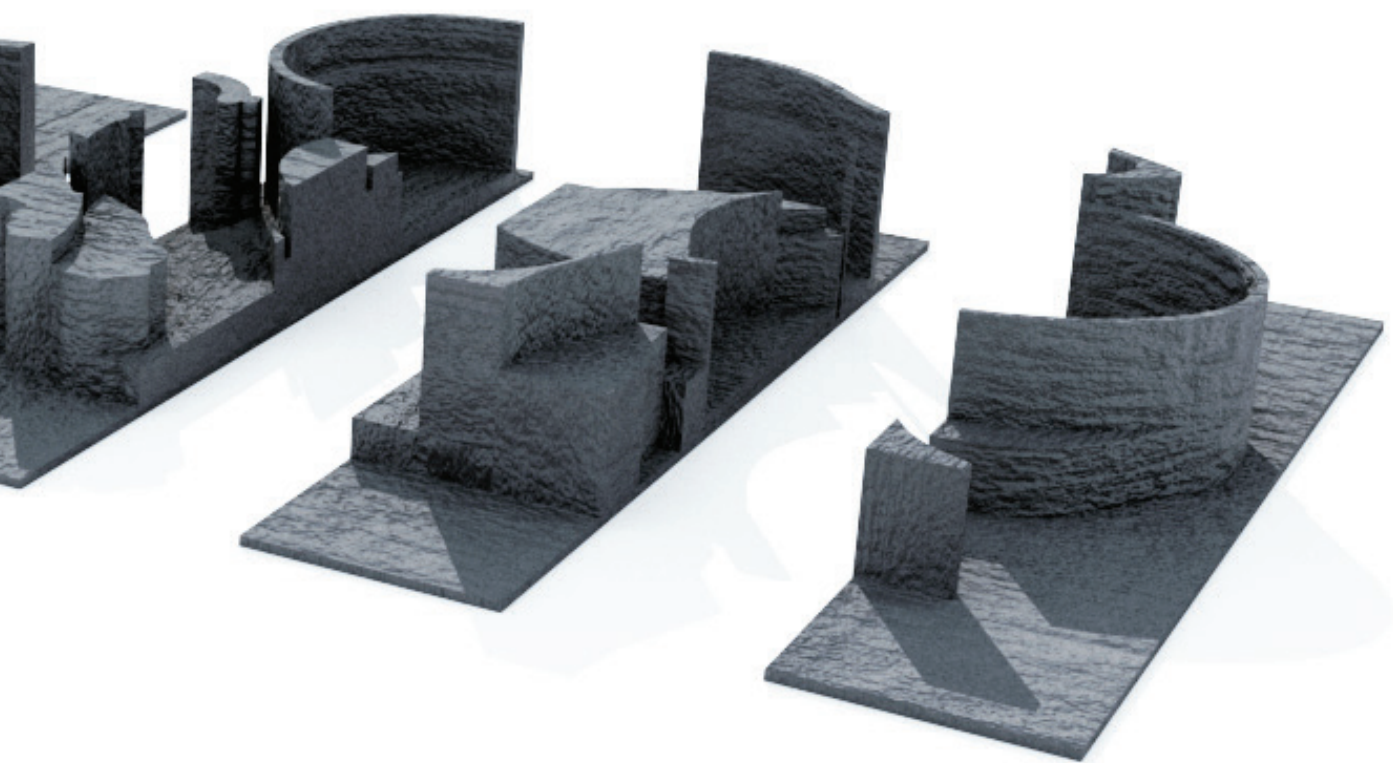
**Image 20** - Purist Composition drawing of found objects, showing the roof plans merged with the elevations

<sup>7</sup>. Course Code - ARCH 5511, Constructed Drawing I

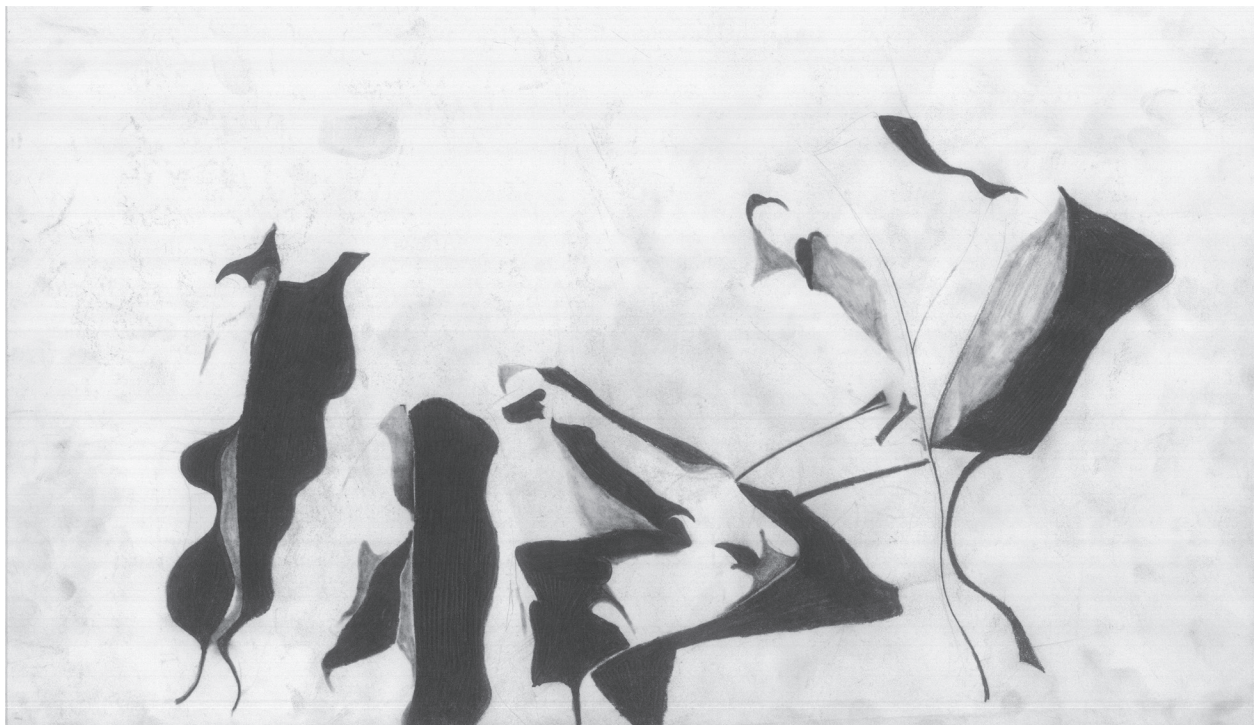


**Image 21** - Serial sections, showing intricate spaces formed between the architectural extrusions.





Another drawing class titled “Drawing as a Parallel Practice”<sup>8</sup> focused on developing an abstract language of representing a single subject, in my case, dried leaves, through the lens of form, dark and light, and spatial relationships between each other. Using dried, curled up leaves as the focal point, certain features were exploited including the soft but fragile nature of the leaves themselves and the large dominant shadows they cast when placed directly in the path of a light source, both on the ground and on each other. The drawing studies ranged from shaded three-dimensional drawings to more figure ground language drawings, using the white of the paper as a part of the drawings themselves to create a large landscape with several scales. The resultant set of drawings attempt to move away from having the leaves themselves be recognizable but keeping certain leaf-like characteristics dominant throughout the page.

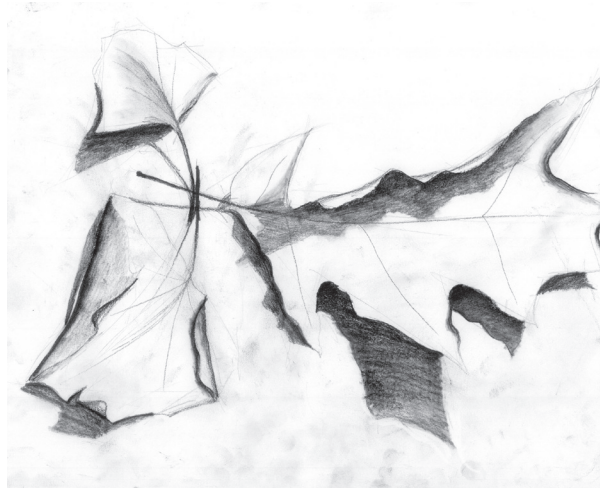


**Image 22** - Dried leaves drawn as a series of shadows, with the lit parts blending seamlessly into the page creating a potential landscape

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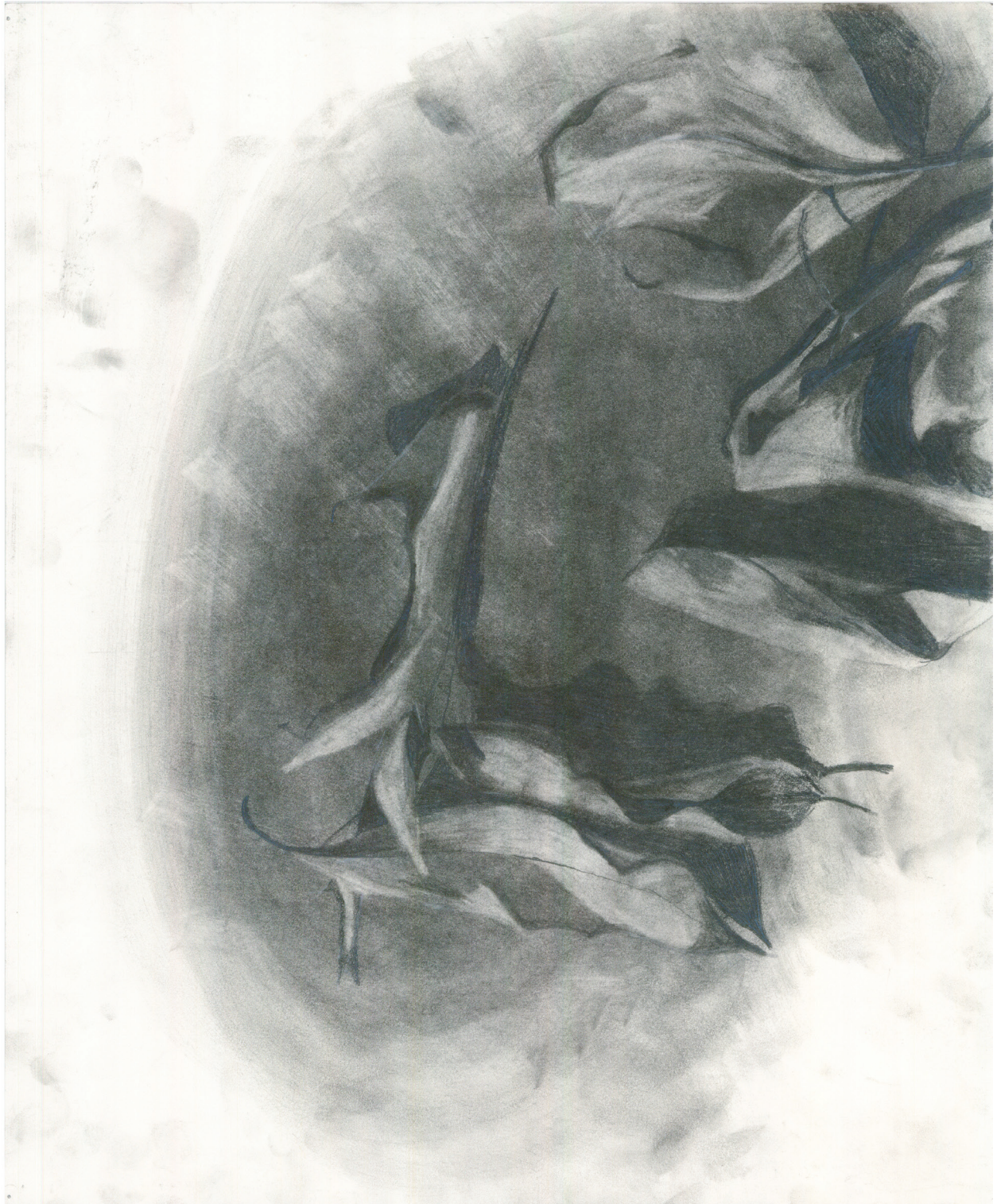
<sup>8</sup>. Course Code - ARCH 6509, Special Topics in Visual Representation - Drawing as a Parallel Practice





**Image 23** - Figure ground explorations of a set of dispersed leaves, generating possibilities of a larger landscape plan





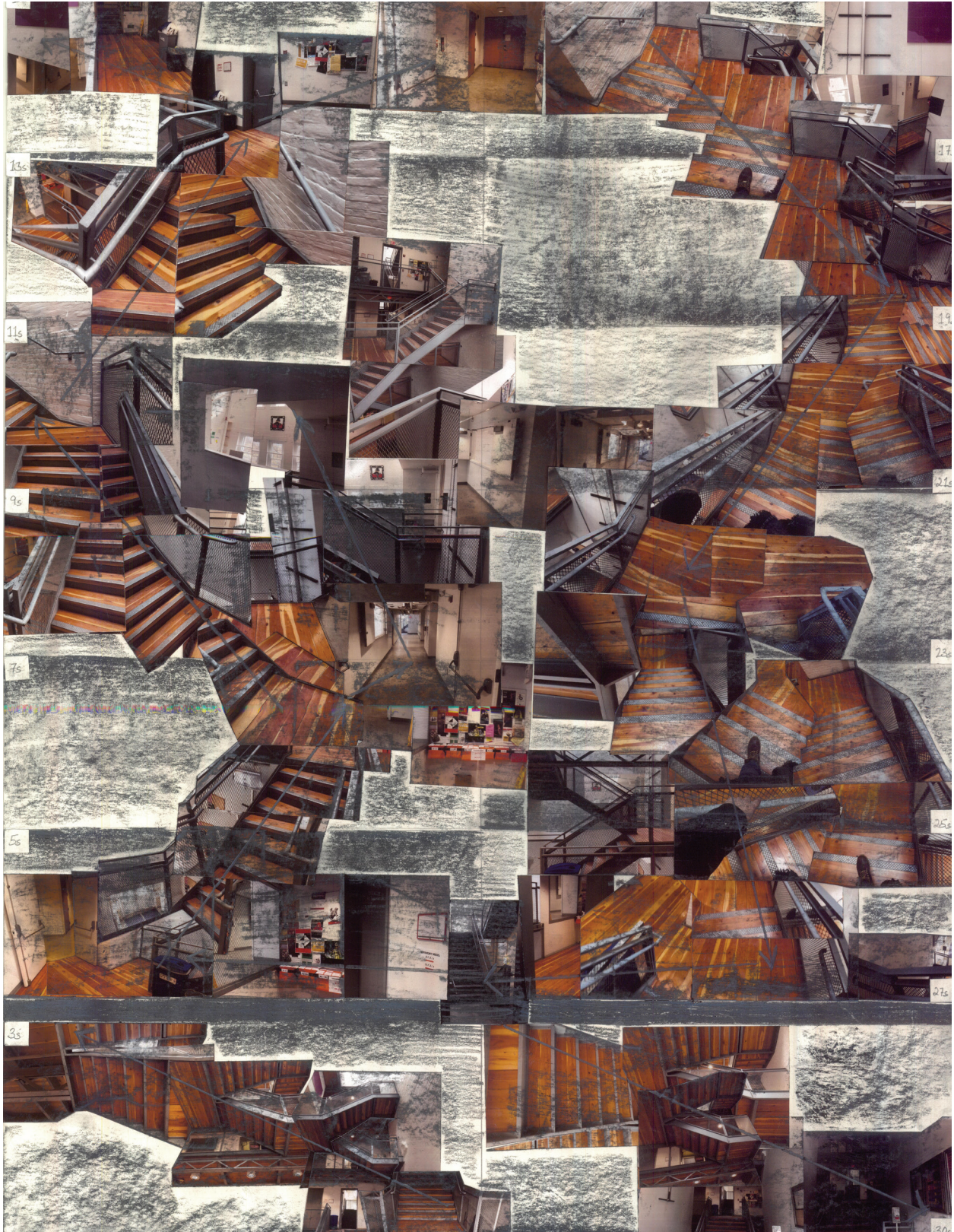
**Image 24** - Dried leaves drawn as a series of shadows, using erasure as a method to reveal the lit surfaces of the leaves from a darker background.





**Image 25** - Figure ground explorations of a set of dispersed leaves, generating possibilities of a larger landscape plan



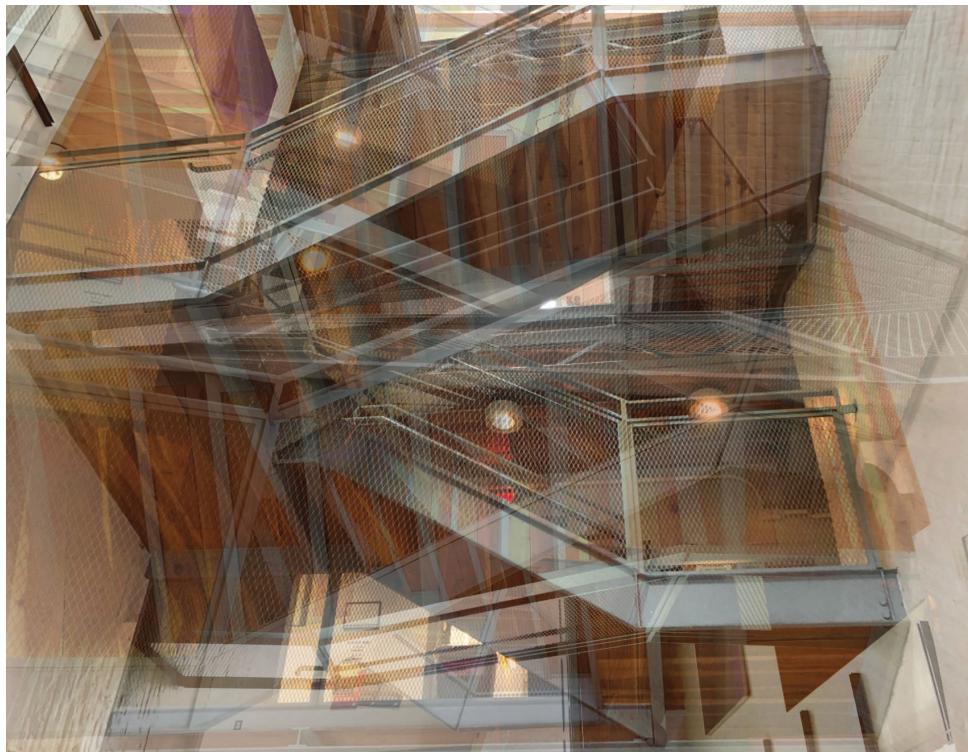


**Image 26** - The central staircase of Olive Tjaden Hall expressed through a rigorous fragmenting of the journey from the base of the stairs to the top and back down, also expressing the urgency of the usage.



## REPRESENTATION AS MONTAGE

One of the more interesting exercises we were assigned during “Multivalent Drawings”<sup>9</sup> included documenting an existing space on campus, in this case, a large staircase at Olive Tjaden Hall, through a series of montages. These are meant to document the usage of the stair, its materiality, its relationship to the architecture around it and also its relationship to the user’s body. Starting with a montage consisting of overlaid images, the structure and form of the staircase was documented but it merely saw the staircase as a suspended sculpture in the middle of the larger atrium. The final result of this exercise was a journey through images, splicing the moments along the way from the bottom of the staircase to the top and back down, put together in a way that represents the urgency of one using this staircase rushing to classes and so forth.



**Image 27** - An X-rayed depiction of the staircase, highlighting major structural lines of the stairs and seeing it here more as a sculpture than a utility component to the building.

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<sup>9</sup>. Course Code - ARCH 6509, Special Topics in Visual Representation - Multivalent Drawings

Representation has many facets that have been ideal in expressing certain qualities of spaces and narratives. It can be used as a design tool and as a documentation tool. While the usual forms of representation still hold utmost value in the field of architecture, one cannot overlook all these other methodologies, be it something quite old-fashioned like hand drawing or sketching, or more futuristic parametric explorations as each attempt at showing another piece of a much larger picture. With the influx of new technologies, there are so many innovative ways to gather information and to generate data, which through exciting forms of representation express design strategies and solutions. One also cannot overlook the older methods of design which included analog drawing, which even today is used as a major design tool, as sketching a quick idea helps get the design process started in many cases. Sometimes it helps to sketch something out that we envision and to see if it even makes sense in the context to begin with. At the end of the day, in order to encourage a design discussion, one needs to be able to put down their ideas onto paper, and that is why representation is an evolving field within the larger architectural context. It is and has always been the basis for the design process.

To quote one of the greatest architects of all time, Oscar Neimeyer,

“It was the drawing that led me to architecture, the search for light and astonishing forms.”

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